Conley E. Ward [ISB No. 1683]
GIVENS PURSLEY LLP
601 W. Bannock Street
P.O. Box 2720
Boise, ID 83701-2720
Telephone: (208) 388-1200
Fax: (208) 388-1300
cew@givenspursley.com

Attorneys for U.S. Geothermal, Inc.
S:\CLIENTS\6667\2\Kunz Testimony.DOC

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

U.S. GEOTHERMAL, INC., an Idaho corporation, Complainant, vs. IDAHO POWER COMPANY, an Idaho corporation, Respondent.	Case No. IPC-E-04-08
BOB LEWANDOWSKI and MARK SCHROEDER, Complainants, vs. IDAHO POWER COMPANY, an Idaho corporation, Respondent.	Case No. IPC-E-04-10

DIRECT TESTIMONY OF DANIEL KUNZ

ON BEHALF OF U.S. GEOTHERMAL, INC.

June 9, 2004

ORIGINAL

Q. PLEASE STATE YOUR NAME AND ADDRESS FOR THE RECORD.

A. My name is Daniel Kunz, and my business address is 1509 Tyrell Lane, Suite B, Boise ID 83706.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am the Chief Executive Officer of U. S. Geothermal, Inc.

Q. PLEASE DESCRIBE YOUR DUTIES AS U.S GEOTHERMAL'S CEO.

A. As chief executive I am responsible for the overall activities of the company and one of my key duties is to secure financing for the development of the company and its projects.

Q. BY WHOM WERE YOU EMPLOYED BEFORE YOU JOINED U.S. GEOTHERMAL?

A. I am a founder of U.S. Geothermal and was previously employed as President and CEO at Ivanhoe Mines Ltd. I am a 26-year resident of Boise and a former executive and 17-year employee of Morrison Knudsen Corporation. A full resume is attached to my testimony as Exhibit No. 1.

Q. WHERE WAS U.S. GEOTHERMAL INCORPORATED?

A. U.S. Geothermal was incorporated in Idaho in February of 2002.

Q. WOULD YOU PLEASE BRIEFLY EXPLAIN THE NATURE OF U.S. GEOTHERMAL'S BUSINESS?

A. The company owns the former U.S. Department of Energy geothermal power project at Raft River near Burley, Idaho

Q. HOW DID U.S. GEOTHERMAL FIRST BECOME INTERESTED IN THE RAFT RIVER SITE?

A. During the energy crisis of the late 1970's, the U.S. DOE selected the geothermal energy resource underlying the Raft River valley in Southern Idaho as the location for the

world's first binary cycle geothermal power plant. After expenditures of nearly $40 million the demonstration project was successfully completed. The project generated electrical power from 5 existing hot water production wells and two injection wells. While places like the Geysers in California have made electrical power using steam directly from the earth to turn turbines, this was the first time electrical power was made using the hot fluid from the earth that was transferred through a heat exchanger to boil organic working fluids like pentane to turn the turbines. By late 1982 the project was completed and in 1984 the project was turned over to private enterprise.

After nearly 20 years of inactivity due to market conditions and technology issues, the project was acquired by U.S. Geothermal, Inc. The project includes 5 production wells, 2 injection wells, and 7 monitoring wells, together with shop office and warehouses and nearly 6 square miles of energy rights. The old U.S. Department of Energy power plant has been removed, however; and with the advances in geothermal and binary cycle generation, a new power plant is now being proposed for the site.

Q. PLEASE DESCRIBE U.S. GEOTHERMAL'S PRELIMINARY INVESTIGATION OF THE SITE.

A. The company hired GeothermEx, a leading expert in worldwide geothermal projects and development, to investigate the energy resource at Raft River. GeothermEx's report utilized a significant amount of U.S. DOE data that the company acquired with the project. The report is dated August 2002 and concludes that the Raft River resource area may be capable of producing up to 15.6 megawatts of electrical power from each square mile of land in the resource area.

Q. PLEASE EXPLAIN THE NATURE OF U.S. GEOTHERMAL'S RIGHTS TO DEVELOP THE GEOTHERMAL RESOURCE.

A. U.S. Geothermal acquired leases and fee simple ground that encompass the center of the geothermal energy resource. The acquisition was completed last year and includes the existing buildings, improvements, wells and well heads. The company either owns or leases the energy rights. The company also leases access rights to the surface for ingress and egress.

Q. WOULD YOU PLEASE PROVIDE THE COMMISSION WITH A GENERAL OVERVIEW OF CURRENT ACTIVITIES AT RAFT RIVER.

A. The current field program has two elements: well testing and aquaculture test work. The company also applied for, and was awarded in mid 2003, a $400,000 cost-sharing grant from the U.S. DOE. The grant was first used to inspect each well with a fiber optic camera. The wells are each over one mile deep and the fiber optic camera was used to assess the physical condition of the wells after 20 years of inactivity. Each well was found to be in very good condition with only minor amounts of scaling on the wellbore. Two wells had minor debris and equipment left behind in the well from the earlier programs in the 1980's.

The grant was also used to bring a large workover rig and associated support equipment to remove the equipment and debris from the wells and to open flapper valves that were installed by the DOE part way down each well to prevent the resource from flowing. In order to flow test the wells, the workover rig installed a stinger to open the flapper valves. This work was completed successfully and each production well is now open for flow. The test work also includes a flow test for each well that is now ongoing.

A Leams separator was attached to each well and the well is allowed to flow for 24 to 48 hours through the separator. The separator is fully instrumented to recover key data like pressure, temperature, volume and the various rates of decline or change from each data point. In addition samples of water, steam and condensate were collected to analyze fluid chemistry.

In addition, the company has entered into a development agreement with Idaho RedClaw Farms, a private firm specializing in the production of fresh water lobster. A small-scale test plan is underway at site to use some of the cascade energy to develop a potential aquaculture business. The core activity on site is focused on determining the power production potential of the 5 existing wells so that a final design can be completed for the construction of a new power plant.

Q. WHAT REMAINS TO BE DONE BEFORE YOU CAN PROCEED WITH DEVELOPMENT OF THE RAFT RIVER RESOURCE?

A. There are essentially four major tasks to be completed before we can actually begin generation of electricity at Raft River. First, we have to complete the well testing in order to determine the current capacity of the existing well field. Second, we need to secure a power sales agreement. Completion of the power sales agreement will enable us to proceed to the next major tasks, which are to arrange financing for the Facility and complete the final engineering of the Facility. With these activities completed the company can then construct and operate the new power plant.

Q. YOU STATED THAT YOU MUST ENTER INTO A POWER SALES AGREEMENT BEFORE FINALIZING FINANCING. WHY IS THE POWER SUPPLY AGREEMENT A NECESSARY PREDICATE TO FINANCING?

A. Investors in a project such as the Raft River Facility have to know the specific details of the power sales agreement in order to determine whether, and on what terms and conditions, they are willing to provide either debt or equity financing. The power sales agreement is a crucial part of the financing effort and will impact raising both the corporate equity and the project debt at Raft River

Q DOES YOUR ANSWER IMPLY THAT YOU ARE WAITING FOR THE EXECUTION OF THE POWER SALES AGREEMENT BEFORE YOU APPROACH POTENTIAL INVESTORS?

A. No. As a practical matter, projects such as this require more or less simultaneous negotiations with potential investors and the purchasing utility. We first contacted Idaho Power in mid 2002, and received our first draft of the power sales agreement in January of 2003. We have been in contact with potential investors almost as long. I have assumed primary responsibility in dealing with investors and lenders, while our COO, Doug Glaspey, has taken the lead in the utility negotiations. It is fair to say that the execution of the power sales agreement is the single most important step in the minds of the investors to allow them to make serious and potentially binding proposals for project and corporate financing.

Q. WHAT IS THE STATUS OF YOUR DISCUSSIONS WITH POTENTIAL LENDERS?

A. For obvious business reasons, I would prefer not to disclose the specifics of our negotiations with potential investors who I hope will be competing to finance the Raft River Facility. But I can say we have experienced considerable interest in both the debt and equity components of our financing needs from a number of firms. These companies include Toll Cross Investments, Frasier Mackenzie Limited, of Toronto, Salman Partners

of Vancouver, Manulife Financial, a Canadian-based financial services group serving millions of customers in 19 countries and territories worldwide and Ormat, a geothermal equipment manufacturer and service provider. Based on my discussions with these potential investors and/or lenders, I am convinced that we can finance the Facility at acceptable rates if we can secure a reasonable contract with Idaho Power at the posted rates.

Q. AND WHAT IS THE STATUS OF YOUR NEGOTIATIONS WITH IDAHO POWER?

A. I can best summarize the current situation as an impasse. The parties have diametrically opposed views on three key issues that will have to be resolved by this Commission. That, of course, is the reason why we filed this Complaint.

Q. PLEASE DESCRIBE THE FIRST OF THOSE ISSUES.

A. The first issue has to do with the definition of a 10 megawatt plant for the purpose of determining whether a facility is eligible for the Commission's published rates. Other witnesses will address this issue in more detail, so I will confine myself to a brief overview of U.S. Geothermal's position.

The Raft River project is unique because it will be Idaho's first commercial geothermal power plant. The thermal plant will rely on air-cooling to achieve the electrical output. Air-cooling is subject to seasonal variations, with the cold of winter supplying very high efficiencies in cooling, and the heat of summer producing the opposite effect. Therefore, even though the plant output will swing from 8 megawatts in the peak of summer to just over 12 megawatts in the dead of winter due to the seasonal ambient temperatures, the overall plant annual output will average 10 MW. This is the

true rated capacity of such a plant. We feel strongly that the plant should qualify as a 10 MW QF and be measured on its performance on an annual basis.

Q. WHY IS THIS ISSUE IMPORTANT?

A. Idaho has vast geothermal potential, and to allow its development the Commission needs to recognize the specific physical elements that govern geothermal energy generation. If the Commission were to adopt Idaho Power's proposed definition of the 10 megawatt cap, it would distort the economics of geothermal energy and severely constrain its development.

Q. HOW WOULD IDAHO POWER'S PROPOSAL DISTORT THE ECONOMICS OF GEOTHERMAL POWER?

A. The financing structure for a geothermal plant must match the economic realities of the plant's output. If, on an annual basis, the power sales agreement allows the first 10 megawatts to be sold to Idaho Power for the posted QF rates, then we can build a plant that can amortize its capital costs over a reasonable period. But if we are limited to a 10 MW turbine, we could never deliver anything close to an average of 10 MW per year. This is because of the seasonal variations I discussed earlier, and because Raft River will have a relatively large parasitic load (the draw of electrical power for pumps and cooling fans). Our turbine has to be big enough to generate sufficient power to run the "in house" load, overcome the variations in ambient temperatures, and still generate 10 megawatts over the course of one year to sell to Idaho Power.

This plant, with its own fuel supply, will become a long-term power source that will be insulated from energy price shocks associated with fossil fuels. Geothermal plants are highly predictable and reliable plants, with overall capacity utilization in the

high 90 percentile range. The plant will be a baseload Idaho Power facility with all the benefits of a baseload thermal plant.

Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION REGARDING THIS ISSUE?

A. I recommend that the definition of the cap for published rates be based on 10 megawatts annual average production, and not 10,000 kilowatts in any single hour.

Q. WHAT IS THE SECOND ISSUE YOU ARE ASKING THE COMMISSION TO RESOLVE?

A. Idaho Power is proposing an extremely onerous liquidated damages provision if energy deliveries are less than 90 percent, or more than 110 percent, of scheduled "Net Energy." Deliveries of power in excess of 110 percent of "Net Energy" would get only 85% of the market price, or the contract rate, whichever is less. The shortfall penalty equates to 85 percent of market prices, less the contract rate, for any supply shortfall below 90% of the scheduled "Net Energy" amount. Later witnesses with more regulatory expertise than I will explain why this provision is unfair and unreasonable. But I want to draw the Commission's attention to one aspect of this proposal that is within my area of expertise. In my opinion, the Raft River project and most other QF projects will not be able to obtain financing if the power sales agreement contains such a provision.

Q. WHAT IS THE BASIS FOR YOUR OPINION?

A. This provision would expose U.S. Geothermal to unquantifiable, and virtually unlimited, risks if a shortfall were to coincide with a spike in power prices. Prospective debt and equity investors are well aware of the recent history of outlandish prices in Pacific Northwest electricity markets. Most rational investors are simply not going to accept this

type of exposure, and the few who might do so would want an exorbitant return in exchange for assuming such a risk.

Q. LET'S TURN TO THE FINAL ISSUE DESCRIBED IN THE COMPLAINT. WOULD YOU PLEASE EXPLAIN IDAHO POWER'S DEMANDS ON THIS ISSUE?

A. Idaho Power wants to include a "regulatory out" clause that would allow it to terminate the power sales agreement if the advent of retail electric competition were to prevent it from recovering its costs associated with the power sales agreement.

Q. IS IDAHO POWER'S POSITION REASONABLE?

A. No. In the first place, Idaho Power does not need the "regulatory out" clause. The power sales agreement will only become effective with this Commission's approval and commitment to allow Idaho Power to include the cost in its rates. If there is a change in regulatory status, Idaho Power would still be able to submit the cost recovery issue to the commission and, if necessary, the courts.

Q. WHAT HAS BEEN THE REACTION OF POTENTIAL INVESTORS TO THIS PROPOSED PROVISION?

A. As testimony from a prospective project lender will show, the proposed provision creates an unnecessary uncertainty as to the validity of the power sales agreement. It is clear that lenders will not take the risk that the agreement can be cancelled by an event of this kind. Even if others consider the risk remote or small, lenders will not be able to price the risk in the loan, and will therefore elect not to lend under these circumstances.

Q. WHAT IS THE REMEDY YOUR ARE SEEKING FROM THE COMMISSION?

A. We are asking the Commission to rule in U.S. Geothermal's favor on each of these contested issues, and for an order directing Idaho Power Company to execute a power sales agreement in substantially the form proposed in Exhibits A and B of the Complaint.

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes, it does.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 9th day of March 2004, I caused to be served a true and correct copy of the foregoing document by the method indicated below and addressed to the following:

Jean Jewell Idaho Public Utilities Secretary 472 W. Washington Street P.O. Box 83720 Boise, ID 83720-0074	___ U.S. Mail _✓_ Hand Delivered ___ Overnight Mail ___ Facsimile
Barton L. Kline Idaho Power Company 1221 W. Idaho Street P.O. Box 70 Boise, ID 83707	___ U.S. Mail _✓_ Hand Delivered ___ Overnight Mail ___ Facsimile
Peter J. Richardson Richardson & O'Leary 99 E. State Street, Ste. 200 P.O. Box 1849 Eagle, ID 83616	_✓_ U.S. Mail ___ Hand Delivered ___ Overnight Mail ___ Facsimile

Conley E. Ward

RESUME OF DANIEL KUNZ

Mr. Daniel Kunz, B.Sc. Engineering, M.B.A.

Mr. Kunz has had a distinguished career in international mining, construction, engineering and natural resource development for more than 25 years. He has extensive management experience with public resource companies, including project and corporate finance, accounting, reporting, operations, and engineering.

Until March 2003, Mr. Kunz was President and director of Ivanhoe Mines, Ltd (TSX:IVN and NASDAQ:HUGO) and was part of the management team that recently discovered the huge Oyu Tolgoi copper gold deposit in Mongolia, 80 km from the Chinese border. Mr. Kunz help to increase the shareholder value of Ivanhoe from a market capital value of about $50 million in 1996 to a recent value of more than $2 billion. During his 8-year tenure with Ivanhoe, among other things Mr. Kunz led the finance, development, construction and operation of a new heap leach copper cathode mine in Myanmar, developed a small high-grade gold mine in Korea, led the acquisition of an iron ore pellet mine and facility in Tasmania, Australia and directed the start up of test production at a metallurgically complex, large underground gold mine in Kazakhstan. Until March 2004, Mr. Kunz served as President of Jinshan Gold Mines (TSXV:JIN) a subsidiary company of Ivanhoe Mines engaged through extensive local partnerships and ventures in exploration for copper, gold and platinum group metals in China.

As President and CEO of MK Gold Company (NASDAQ:MKAU), he directed its initial public offering in 1993, raising $65 million for worldwide mine development and exploration activities. MK Gold owned and operated several gold mines in the western USA and provided contract-mining services to the industry. Previously, he spent 15 years in senior positions, including Vice president and Controller, with Morrison Knudsen Corporation (NYSE:WGI) (now known as Washington Group International), a $4 billion international engineering, construction and mining company. During the late 1970's, the 1980's and the early 1990's in its Mining Group, Mr. Kunz was a senior executive with key responsibilities in large-scale coal mining projects in the US and a variety of base and precious metals projects around the world.

In 1995, the University of Montana Tech (Montana School of Mines) named Mr. Kunz as a Distinguished Alumni of the Year.

Mr. Kunz served on the board of directors of the Boise Chamber of Commerce in 1992 and 1993.

Mr. Kunz resides in Boise, Idaho with his wife Carol and four children.

Exhibit No. 1
Case Nos. IPC-E-04-08 and IPC-E-04-1
D. Kunz, U.S. Geothermal
June 9, 2004